

REMARKS

Claims 1, 2, 4 - 15, 17 and 18 remain active in this application. Claims 3 and 16 have previously been canceled. A minor typographical revision has been made in claim 17. No new matter has been introduced into the application. The continued indication of allowability of claims 9 - 14 and 17 is noted with appreciation.

Claims 1, 2, 4, 15 and 18 have been rejected under 35 U.S.C. §102 as being anticipated by Fork '657 and claims 5 - 8 have been rejected under 35 U.S.C. §103 as being unpatentable over Fork '657 in view of Fork et al. '517. These grounds of rejection are respectfully traversed as being substantively in error, procedurally improper and unclear as to the prior art teachings relied upon.

As discussed in the specification, the use of LED's presents problems in an optical print head due to the cost of fabrication including the cost of GaAsP substrates and the precision cutting required to assemble an adequate length of LED array for a full page-wide row as well as limited manufacturing yield and the difficulty of integrating drive circuitry on the same substrate. Other types of light emitting device which may partially solve these problems impose a trade-off between service lifetime and light output (which is also true of LEDs if overdriven to increase printing throughput). In either case, the print head cannot be replaced at the user level because of the precision alignment required. Further, if reduced light output is chosen and the operative exposure accumulated by multiple exposures with a two-dimensional array of light sources moved relative to the photosensitive surface (e.g. xerographic drum) the number of connections to the print head becomes unacceptably large. The invention solves these

problems by forming scanning and data routing circuitry on the same substrate with the light emitters such that a full two dimensional array can be used for forming an image on the photosensitive surface.

The grounds of rejection now asserted by the Examiner present Fork '657 as the sole or principal reference on which the rejection is based. In the rejection asserted under 35 U.S.C. §103, Fork et al. '517, previously applied as a principal reference in a rejection and now overcome, is now applied as a secondary reference. It is respectfully pointed out, however, that Fork et al. '517 is incorporated by reference in Fork '657. Therefore, to the extent, if any, that Fork '657 can be modified in accordance with Fork et al. '517, consistent with operability in the manner intended in Fork '657 in the rejection under 35 U.S.C. §103, Fork et al. '517 literally adds nothing to Fork '657 and it is respectfully submitted that the propriety of any such modification is unaffected by the fact of the incorporation by reference. Further, it is unclear from the statement of the rejection under 35 U.S.C. §102 applying Fork '657, whether or not the content of Fork et al. '517 is being relied upon.

In this regard, it is Applicant's position that the invention literally disclosed in Fork '657 (e.g. as distinguished from the subject matter of Fork et al. '517 as incorporated by reference) and which will be referred to hereinafter as Fork '657 *per se* is so different from that of Fork et al. '517 that modification of the former in accordance with the latter would preclude operability of the arrangement of either reference in the manner intended and thus such modification is improper under the precedent decision of *In re Gordon*, 221 USPQ 1125 (Fed. Circ., 1984). Further, it is Applicant's position that the teachings of Fork '657 *per se* are utterly irrelevant to the subject matter of the claims by the explicit terms

thereof and, moreover, since a rejection based on Fork et al. '517 in view of Uno et al. has been overcome, the rejection based on Fork '657 in combination with Fork et al. '517, whether or not by virtue of the incorporation by reference, does not support a conclusion of anticipation or obviousness as effectively admitted by the Examiner on the record.

Specifically, Fork '657 (*per se*) cannot anticipate any claim in the application for the simple reason that it does not teach a vertical scanning circuit and, like Fork et al., as previously pointed out in the prior response, does not teach or suggest the formation of peripheral circuits on the same substrate with the light-emitting devices. (Thin film transistors 304 are provided in the light-emitting array and are not peripheral circuits, much less scanning circuits, as claimed.) More specifically, Fork *per se* is directed to the use of high light output LEDs (using organic light-emitting material, as noted in the passage of column 5 relied upon by the Examiner) and approaches the problem of reduced manufacturing yield and in-service loss of operability of the LEDs by forming multiple rows of LEDs and switching between rows when malfunction of one or more LEDs of a row is detected. By doing so the print head becomes, in effect self-replacing and issues of alignment at the user level are avoided. To achieve this function, the circuit 30 is a multiplexer for redirecting drive signals and not a vertical scanning circuit as claimed. Only one row of LEDs is used at any given time as explicitly stated at column 3, lines 29 through 48 and column 4, lines 56 through 62. There is apparently no need to use more than one row of LEDs at a time in accordance with the high light output thereof and the self-replacement provided to address the problem of reduced lifetime of organic LEDs operated in such a manner. Therefore, Fork '657 does not anticipate any claim in the

application and cannot properly be modified in accordance with any device such as that of Fork et al. '517 having a vertical scanning circuit since operation in the intended manner would be precluded and the intended function (e.g. the self-replacement of a row of light emitters) would be lost, as is apparent from the fact that multiple rows would then be used to expose the photosensitive surface and could not function as replacement structures. Therefore, it is respectfully submitted that Fork '657 does not anticipate any claim in the application regardless of whether or not the subject matter incorporated by reference from Fork et al. '517 is relied upon (as is unclear from the statement of the rejection). By the same token, the combination of Fork '657 and Fork et al. '517 does not support the conclusion of obviousness asserted by the Examiner since the teachings and or suggestions thereof are not properly combinable and, in any event, the claim recitations of the peripheral devices being formed on the same substrate with the light emitting devices is not answered by the references applied and it is respectfully submitted that the Examiner has not made and cannot make a *prima facie* demonstration of anticipation or obviousness of any claim of the application based on Fork and/or Fork et al. Accordingly, it is respectfully submitted that the grounds of rejection asserted by the Examiner are clearly in error and reconsideration and withdrawal thereof is respectfully requested.

Since all rejections, objections and requirements contained in the outstanding official action have been fully answered and shown to be in error and/or inapplicable to the present claims, it is respectfully submitted that reconsideration is now in order under the provisions of 37 C.F.R. §1.111(b) and such reconsideration is respectfully requested. Upon reconsideration, it is also respectfully submitted that

this application is in condition for allowance and such action is therefore respectfully requested.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

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PATENT TRADEMARK OFFICE

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Marshall M. Curtis".

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APPENDIX

Claim 17:

17. (Amended) An optical printer head as recited in claim 15, wherein a plurality of light emitting devices are provided in each picture element and said means for selectively controlling luminance includes means for energizing a selected plurality of said [light-emitting] light-emitting devices.